

In the Claims:

1-11. (canceled)

12. (new) Circuitry comprising:

- A. functional circuitry; and
- B. a scan path including a test data input terminal, a test data output terminal, and scan cells, each scan cell including an input multiplexer with a functional data input lead connected to the functional circuitry and a test data input lead coupled to the test data input terminal, the scan cells including a dedicated scan cell with a functional data output lead separate from a test data output lead, and shared scan cells, each with a combined output lead for functional data output and test data output, the shared scan cells being connected in series with one another with the combined output of one shared scan cell being connected to the test data input lead of another shared scan cell, the scan path also including multiplexer circuitry having an input coupled to the test data output lead, an input directly connected to a combined output lead, a select input, and an output connected in the scan path.

13. (new) The circuitry of claim 12 in which the test data input lead of the series connection of shared scan cells is connected to the test data output lead.

14. (new) The circuitry of claim 12 including another dedicated scan cell having a test data output lead connected to the test data input lead of the dedicated scan cell.

15. (new) The circuitry of claim 12 in which the multiplexer circuitry output is connected to the test data output terminal.

16. (new) The circuitry of claim 12 in which the multiplexer circuitry output is connected to the test data input lead.

17. (new) The circuitry of claim 12 in which the combined output of a shared scan cell is also connected to the input of an output buffer.

18. (new) The circuitry of claim 12 in which the functional data input lead of a shared scan cell is connected to the output of an input buffer.

19. (new) The circuitry of claim 12 in which the functional data input lead of the dedicated scan cell is connected to the output of an input buffer.

20. (new) The circuitry of claim 12 in which the functional data output lead of the dedicated scan cell is connected to the input of an output buffer.